What is claimed is:

1. A method of alleviating constriction of a blood vessel, other than a cerebral or cardiac blood vessel, in a human, the method comprising adventitially administering a nitric oxide donor compound to the vessel in an amount effective to alleviate constriction of the vessel.

2. The method of claim 1, wherein the vessel supplies a tissue selected from the group consisting of an erectile tissue, an ocular tissue, a non-cardiac muscle tissue, a non-cerebral neuronal tissue, an epithelial tissue, and an endothelial tissue.

3. The method of claim 2, wherein the compound is topically administered to the tissue.

4. The method of claim 2, wherein the compound is administered to a fluid that contacts the tissue.

5. The method of claim 1, wherein the compound is administered in a sustained-release formulation.

6. The method of claim 1, wherein the compound is selected from the group consisting of nitroglycerine, arginine, and a nitroprusside salt.

7. The method of claim 1, wherein the compound is a nitroprusside salt.

8. The method of claim 1, wherein the compound is administered to the vessel by delivering to the vessel a nucleic acid vector encoding an enzyme that catalyzes generation of nitric oxide.

9. The method of claim 7, wherein from about 38 to 336 micromoles per day of the compound are administered to the human.

10. The method of claim 9, wherein from about 38 to 115 micromoles per day of the compound is administered to the human.

11. The method of claim 1, wherein the compound is administered in a pharmaceutical composition comprising a scavenger compound selected from the group consisting of a cyanide scavenger and a cyanate scavenger.

12. The method of claim 11, wherein the scavenger compound is selected from the group consisting of hydroxycobalamin and thiosulfate.

13. The method of claim 1, wherein the compound is administered in an amount that is insufficient to induce systemic hypotension in the human.

14. The method of claim 1, further comprising administering to the human a compound selected from the group consisting of an anti-inflammatory agent, an antibiotic, an oxyhemoglobin-reducing compound, a thrombolytic agent, and anti-emetic compound.

15. The method of claim 1, wherein the compound decomposes under physiological conditions.

16. The method of claim 1, wherein the compound is administered in conjunction with a vasodilator that is not an NO donor compound.

17. The method of claim 1, wherein the human is afflicted with sexual dysfunction.

18. The method of claim 1, wherein the human is afflicted with peripheral neuropathy.

19. The method of claim 1, wherein the human is afflicted with diabetic retinopathy.

20. The method of claim 1, wherein the human is afflicted with a disorder selected from the group consisting of a neurodegenerative disorder, a movement disorder, a traumatic brain injury, and dementia.

21. A method of inhibiting constriction of a blood vessel, other than a cerebral or cardiac blood vessel, in a human, the method comprising adventitially administering a nitric oxide donor compound to the vessel in an amount effective to inhibit constriction of the vessel.

22. The method of claim 21, wherein the vessel supplies a tissue selected from the group consisting of a skin tissue, an erectile tissue, an ocular tissue, a non-cardiac muscle tissue, a non-cerebral neuronal tissue, and an oral tissue.

23. The method of claim 22, wherein the compound is topically administered to the tissue.

24. The method of claim 22, wherein the compound is administered to a fluid that contacts the tissue.

25. The method of claim 21, wherein the compound is administered in a sustained-release formulation.

26. The method of claim 21, wherein the compound is selected from the group consisting of nitroglycerine, arginine, and a nitroprusside salt.

27. The method of claim 21, wherein the compound is a nitroprusside salt.

28. The method of claim 27, wherein the compound is sodium nitroprusside.

29. The method of claim 27, wherein from about 1 to 92 micromoles per day of the compound are administered to the human.

30. The method of claim 27, wherein from about 1 to 38 micromoles per day of the compound is administered to the human.

31. A method of enhancing wound healing in a human, the method comprising adventitially administering a vasodilating compound to a blood vessel in a wounded tissue of the human in an amount effective to enhance blood flow through the vessel and enhance healing of the wounded tissue.

32. The method of claim 31, wherein the human is afflicted with a surgically-inflicted wound.

33. The method of claim 31, wherein the wound is an oral wound.

34. The method claim 31, wherein the compound is topically administered to the wound.

35. The method of claim 31, wherein the compound is administered in a sustained-release formulation.

36. The method of claim 31, wherein the compound is a nitric oxide donor compound.

37. The method of claim 31, wherein the compound is not a nitric oxide donor compound.

38. The method of claim 37, wherein the compound is adenosine.

39. A method of alleviating constriction of a blood vessel, other than a cerebral or cardiac blood vessel, in a human, the method comprising adventitially administering a vasodilating compound to the vessel in an amount effective to alleviate constriction of the vessel.

40. The method of claim 39, wherein the vasodilating compound is a nitric oxide donor compound.

41. The method of claim 39, wherein the vasodilating compound is not a nitric oxide donor compound.

42. The method of claim 41, wherein the vasodilating compound is adenosine.

43. A method of inhibiting constriction of a blood vessel, other than a cerebral or cardiac blood vessel, in a human, the method comprising adventitially administering a vasodilating compound to the vessel in an amount effective to inhibit constriction of the vessel.

44. The method of claim 43, wherein the vasodilating compound is a nitric oxide donor compound.

45. The method of claim 43, wherein the vasodilating compound is not a nitric oxide donor compound.

46. The method of claim 45, wherein the vasodilating compound is adenosine.

47. A method of alleviating constriction of a blood vessel in a human, the method comprising adventitially administering to the vessel a vasodilating compound other than a nitric oxide donor compound in an amount effective to alleviate constriction of the vessel.

48. A method of inhibiting constriction of a blood vessel in a human, the method comprising adventitially administering to the vessel a vasodilating compound other than a nitric oxide donor compound in an amount effective to inhibit constriction of the vessel.

49. A vasodilating composition for adventitial administration to a constricted or spastic blood vessel of a human, the composition comprising a nitric oxide donor compound and a pharmaceutically acceptable carrier.

50. The vasodilating composition of claim 49, wherein the pharmaceutically acceptable carrier is selected from the group consisting of the cerebrospinal fluid of the human and a synthetic cerebrospinal fluid.

51. A device for delivering to a human a pharmacological agent having a short half-life in solution, the device comprising:

a first hollow body having a flow orifice, a first fluid access port, and a first pressure orifice, each in fluid communication with the interior of the first hollow body;

a second hollow body for containing the pharmacological agent, the second body having a second fluid access port in fluid communication with the interior of the second hollow body and in fluid communication with the first fluid access port, and an outlet port in fluid communication with the interior of the second hollow body; and

a first pressure modulator connected to the first pressure orifice.

52. The device of claim 51, further comprising a valve having an inlet orifice coupled to the outlet port and an outlet orifice, wherein the valve permits fluid flow in the direction from the inlet orifice to the outlet orifice.

53. The device of claim 52, wherein the outlet orifice is in fluid communication with the interior of the first hollow body.

54. The device of claim 51, wherein the second hollow body contains the pharmacological agent in the interior thereof.

55. The device of claim 54, wherein the pharmacological agent is a nitric oxide donor compound.

56. The device of claim 55, wherein the pharmacological agent contains a single human intrathecal delivery amount of the nitric oxide donor compound.

57. The device of claim 51, wherein the second hollow body further comprises at least one compartment containing the pharmacological agent, wherein the interior of the compartment is separated from the interior of the second hollow body by a breachable barrier..

58. The device of claim 57, wherein the breachable barrier is selected from the group consisting of a polymeric film and a foil.

59. The device of claim 58, wherein the film is selected from the group consisting of a film having at least one score and a film having at least one perforation.

60. The device of claim 57, further comprising a compartmental plunger slidably disposed within the compartment for breaching the barrier, wherein when the compartmental plunger is actuated, the barrier is breached, whereby the composition is brought into fluid communication with the interior of the second hollow body.

61. The device of claim 51, wherein the pressure modulator comprises a first plunger snugly slidably disposed within the interior of the first hollow body, the first plunger being positionable within the first hollow body between an advanced position and a retracted

position, wherein the flow orifice is not in fluid communication with the fluid access port when the first plunger is positioned in the advanced position, and wherein the flow orifice is in fluid communication with the fluid access port when the first plunger is positioned in the retracted position.

62. The device of claim 61, further comprising a second plunger snugly slidably disposed within the second hollow body, whereby when the second plunger is urged in the direction of the outlet port, the contents of the second hollow body are discharged through the outlet port.

63. The device of claim 62, wherein the first hollow body is a first syringe, wherein the second hollow body is a second syringe, wherein the interiors of the first and second syringes are connected to the interior of a ventriculostomy by means of a multiple-way valve, wherein the multiple-way valve selectably connects any two of the interior of the first syringe, the interior of the second syringe, and the interior of the ventriculostomy.

64. The device of claim 51, wherein the second hollow body is disposed within the interior of the first hollow body; the first hollow body and second hollow body are substantially longitudinally coaxial; the outlet orifice is disposed in close proximity to the flow orifice; and the flow orifice is adaptable to a cerebrospinal fluid drainage system.

65. A subdural catheter comprising a flexible, generally tubular body having an outer surface, a proximal end, a distal end, a lumen extending within the body from the proximal end, at least one hole extending through the body from the outer surface to the lumen, and a hub at the proximal end for attaching the catheter to a fluid handling device.

66. The subdural catheter of claim 65, wherein the body has a flattened cylindrical shape.

67. The subdural catheter of claim 65, wherein the body is at least partially radio opaque.

68. The subdural catheter of claim 65, wherein the width of the lumen at the distal end of the body is greater than the width of the lumen at the proximal end of the body.

69. A subdural insertional guide comprising a substantially rigid body having a long axis, a proximal end, a distal end, an outer surface, and a lumen extending within the body from the proximal end to the outer surface, wherein the lumen extends generally parallel to the long axis at the proximal end of the body and generally perpendicular to the long axis at the outer surface, wherein when the distal end of the body is inserted into a trephination in the skull of a human, the lumen is in fluid communication with a subdural space in the human.

70. The subdural insertional guide of claim 69, further comprising an inflatable balloon at the distal end of the body.

71. A kit for dilating a blood vessel, other than a cerebral or cardiac blood vessel, in a human, the kit comprising a nitric oxide donor compound and an instructional material which describes adventitially administering the compound to the vessel.

72. A kit for dilating a constricted or spastic blood vessel, other than a cerebral or cardiac blood vessel, in a human, the kit comprising at least one syringe containing a nitric oxide donor compound in a substantially anhydrous form and a multi-way valve for connecting the syringe with a second syringe and with a liquid conduit in fluid communication with the adventitial surface of a the blood vessel.

73. A kit for intrathecal administration of a nitric oxide donor compound to a human, the kit comprising

a) a device for administering the compound, the device comprising:

a first hollow body having a flow orifice, a first fluid access port, and a first pressure orifice, each in fluid communication with the interior of the first hollow body;

a second hollow body for containing the compound, the second body having a second fluid access port in fluid communication with the interior of the second hollow body and in fluid communication with the first fluid access port, and an outlet port in fluid communication with the interior of the second hollow body; and

a valve having an inlet orifice coupled to the outlet port and an outlet orifice, wherein the valve permits fluid flow in the direction from the inlet orifice to the outlet orifice; and

not shown

b) an instructional material which describes use of the device to intrathecally administer the compound to a human.

not shown

74. A subdural catheterization kit comprising

a subdural catheter comprising a flexible, generally tubular catheter body having an outer surface, a proximal end, a distal end, a lumen extending within the catheter body from the proximal end, at least one hole extending through the catheter body from the outer surface to the lumen, and a hub at the proximal end for attaching the catheter to a fluid handling device; and

a subdural insertional guide, the guide comprising a substantially rigid guide body having a long axis, a proximal end, a distal end, an outer surface, and a lumen extending within the guide body from the proximal end to the outer surface, wherein the lumen extends generally parallel to the long axis at the proximal end of the guide body and generally perpendicular to the long axis at the outer surface, wherein when the distal end of the guide

body is inserted into a trephination in the skull of a human, the lumen is in fluid communication with a subdural space in the human.